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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,713	12/27/2001	Blair T. MacKiewich	A363 0016 GNM/bds	2000
720	7590	02/06/2006	EXAMINER	
OYEN, WIGGS, GREEN & MUTALA LLP 480 - THE STATION 601 WEST CORDOVA STREET VANCOUVER, BC V6B 1G1 CANADA			DYKE, KERRI M	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/026,713	MACKIEWICH ET AL.	
	Examiner	Art Unit	
	Kerri M. Dyke	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-25 and 27-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6,8-24 and 37-42 is/are allowed.
- 6) ☒ Claim(s) 25 and 27-35 is/are rejected.
- 7) ☒ Claim(s) 28 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims 7 and 26 have been canceled.
2. Claims 37-42 have been added.
3. Claims 1-6, 8-25, and 27-42 are currently pending.

Response to Arguments

4. Applicant's arguments, see page 13 paragraph 1, filed 1/12/2006, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings has been withdrawn.
5. Applicant's arguments, see page 13 paragraphs 3-5, filed 1/12/2006, with respect to claims 5, 23, and 29 have been fully considered and are persuasive. The rejection of claims 5, 23, and 29 has been withdrawn.
6. Applicant's arguments, see page 14 paragraphs 3 and 4, filed 1/12/2006, with respect to claims 1-6 and 9-11 have been fully considered and are persuasive. The rejection of claims 1-6 and 9-11 has been withdrawn.
7. Applicant's arguments, see page 15 paragraphs 2 and 3, filed 1/12/2006, with respect to claims 12-19 have been fully considered and are persuasive. The rejection of claims 12-19 has been withdrawn.
8. Applicant's arguments, see page 15 paragraphs 4 and 5, filed 1/12/2006, with respect to claims 20-24 have been fully considered and are persuasive. The rejection of claims 20-24 has been withdrawn.

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9. Applicant's arguments with respect to claims 25 and 27-35 have been considered but are moot in view of the new ground(s) of rejection.

10.

Claim Objections

11. Claims 28 and 31 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 31 recites the same limitations, with slight wording variations, as the limitations of clauses 3 and 4 in claim 25. Claim 28 fails to add further structure to the VLAN of claim 25.

12. Claim 31 objected to because of the following informalities: It is referred to as being dependent upon canceled claim 26 instead of claim 25. Appropriate correction is required.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. MPEP 2112.02 states that a new use for an old structure or composition may be patentable as a process of using. However, when the claim recites using an old composition or structure and the "use" is directed to a result or property of that composition or structure, then the claim is anticipated. The VLAN structure claimed in claims 25 and 27-35 is known and is

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therefore unpatentable. The previous rejection is restated below including the unnecessary sections related to the use clauses. The structural components have been bolded for clarity.

15. *Claims 25-27, and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabletron's SecureFast VLAN Operation Model Version 1.8, RFC 2643 in view of Cabletron's VlanHello Protocol Specification Version 4, RFC 2641.*

1. In regards to claim 25, RFC 2643 discloses a virtual LAN having a topology comprising a **spanning tree** (Page 18) the virtual LAN comprising: a **plurality of network segments each bridged to a connection-based network** (section 2.1 page 6); a **plurality of connections in the connection-based network** (Page 4 discloses that there can be 0-7 network links.), **the connections interconnecting the plurality of network segments** (it is inherent that the connections serve to connect the network segments); a **packet source located on a first one of the connections** (page 17), the packet source configured to generate and send on the connection continuity checking packets in a direction toward a root of the spanning tree; a **packet sink located on the first one of the connections at a location between the packet source and the root of the spanning tree**, the packet sink configured to receive the continuity checking packets and to generate a request for a change in the topology of the VLAN in response to not receiving one or more of the continuity checking packets sent by the packet source wherein the **connection-based network comprises at least one intermediate node located along the connection between the packet source and the packet sink** (section 2.1 page 6 The listing of features implies the presence of at least one intermediate node between the source and sink. For example, call could not be rerouted around a failed link if all connections between the source and

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sink were direct connections.). Page 17 discloses that the topology spanning tree server is invoked when a switched is either discovered or lost through the use of Keepalive, i.e. continuity, packets. A request for topology change is made in response to not receiving continuity packets. Page 17 also discloses that the continuity packets are sent to each of the switch's neighbors, which means the packets travel in the leaf-to-root, as well as the root-to-leaf direction. RFC 2643 does not disclose sending the continuity packets temporally spaced.

RFC 2641 discloses sending continuity packets every 5 seconds in section 2.1 on page 2. It also discloses sending a request for topology change if packets are not received within a predetermined time period.

It would have been obvious to one of ordinary skill in the art to use the continuity packet protocol defined by RFC 2641 to trigger the topology changes of the network in RFC 2643 because section 4.2.1 on page 17 of RFC 2643 discloses that the protocol of RFC 2641 is supposed to be used.

2. In regards to claim 27, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 26 wherein the **connection-based network comprises an ATM network**. Page 10 discloses that the invention of RFC 2643 can operate over an ATM network.

3. In regards to claim 31, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 26 comprising, on each of a plurality of the connections: **a packet source** configured to generate and send continuity checking packets at intervals to **a corresponding packet sink located on the one of the plurality of the connections at a location between the packet source and the root of the spanning tree**, the packet sink configured to receive the continuity checking packets and generate the request for a change in the topology of the VLAN in response to determining

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that a number of the continuity checking packets sent by the corresponding packet source have not been received. Pages 2-3 of RFC 2641 disclose that continuity packets are sent every 5 seconds and that a request for topology change will be triggered if packets are not received. Pages 17-18 of RFC 2643 indicate that the VLAN has a spanning tree topology. In the current configuration packets can be both sourced and sunk at each node of the tree, including every leaf and root.

4. In regards to claim 32, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 31 wherein **the spanning tree comprises a plurality of leaves and one of the packet sources is located at each of the leaves of the spanning tree.** Pages 17-18 of RFC 2643 indicate that the VLAN has a spanning tree topology. In the current configuration packets can be both sourced and sunk at each node of the tree, including every leaf and root.

5. In regards to claim 33, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 32 wherein **packet sinks corresponding to the packets sources located at the leaves of the spanning tree are located at the root of the spanning tree.** Pages 17-18 of RFC 2643 indicate that the VLAN has a spanning tree topology. In the current configuration packets can be both sourced and sunk at each node of the tree, including every leaf and root.

6. In regards to claim 34, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 33 comprising a **VLAN-level fault tolerance mechanism** wherein the packet sink is configured to trigger the VLAN- level fault tolerance mechanism in response to not receiving one or more of the continuity checking packets sent by the packet source. Pages 2-3 of RFC 2641 disclose that continuity packets are sent every 5 seconds and that a request for topology change will be triggered if packets are not received. Pages 17-18 of RFC 2643 indicate that the VLAN has a

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spanning tree topology. In the current configuration packets can be both sourced and sunk at each node of the tree, including every leaf and root. The fault tolerance mechanism is the topology change request, which will allow for calls to be routed around the failure.

7. In regards to claim 35, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 33 wherein **the root of the spanning tree is located at a bridge** and the bridge generates and sends bridge protocol data units to other bridges located at the leaves of the spanning tree. Page 18 discloses that BPDU are exchanged. Page 17 discloses that the continuity packets are sent to each of the switch's neighbors and each switch can be viewed as a multiport bridge. Although it is not indicated it is inherent that one of the bridges is the root and the other are leaves for each VLAN configuration.

8. *Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabletron's SecureFast VLAN Operation Model Version 1.8, 2643 in view of ITU-T Recommendation I.610 in further view of Cabletron's VlanHello Protocol Specification Version 4, RFC 2641.*

9. In regards to claim 28, RFC 2643 and RFC 2641 disclose the virtual LAN of claim 27 wherein the packet source is configured to generate and send continuity cells and the packet sink is configured to receive the continuity cells. Using OAM for the continuity cells is not disclosed.

ITU-T Recommendation I.610 discloses using OAM cells for continuity checking in section 7.2 on page 27.

It would have been obvious to one of ordinary skill in the art to use OAM cells as described in I.610 to perform the continuity checking functions described in RFC 2643 because

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OAM cells are capable of providing five different features, including failure detection and fault localization, as described on page 2 of I.610.

10. In regards to claim 29, RFC 2643, RFC 2641, and I.610 disclose the virtual LAN of claim 26 wherein the packet source is associated with **a timer** and the packet source is configured to generate and send the OAM cells at equally spaced-apart times (section 2.1 on pages 2 and 3 of RFC 2641).

In regards to claim 30, RFC 2643, RFC 2641, and I.610 disclose the virtual LAN of claim 29 wherein the packet sink is associated with **a timer** and the packet sink is configured to generate the request for a change in the topology of the VLAN when a time longer than a threshold time has passed since the packet sink has received one of the OAM cells. Pages 17 and 18 of RFC 2643 indicate that a change for request will be made in response to network changes. Page 3 of RFC 2641 indicates that one of those changes is in response to not receiving a packet within a threshold time.

Allowable Subject Matter

11. Claims 1-6, 8-24, and 36-42 are allowed.
12. The following is a statement of reasons for the indication of allowable subject matter:
 - a. Claims 1, 20, and 36 have been amended to include the limitation of the continuity checking cells traveling through an intermediate node between the source and sink nodes. Applicant correctly states at the bottom of page 14 in the arguments filed 1/12/2006 that the Keepalive messages taught by Cabletron in RFC 2642 and 2643 are delivered only to neighboring nodes. The messages cannot pass through an intermediate node.

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b. Claim 8 requires one continuity packet to be sent at least every $\frac{1}{2}$ - 2 seconds.

Claim 12 requires at least one every 2 seconds. Neither of these intervals is taught by the prior art. RFC 2641 discloses a regular interval of 5 seconds but the prior art does not teach or suggest the claimed intervals.

Conclusion


13. The points raised by MPEP 2112.02 were not raised in the previous office action. Due to this oversight this action is NOT made final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kmd


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